

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. **(Currently Amended)** A thermal focusing device comprising[:] a plurality of plates and a temperature reduction means, wherein:

the plates are bonded together and at least one channel with an entrance and exit is formed within; and

the [a] temperature reduction ~~module~~ means cools a first channel of the at least one channel so as to trap a gas sample within the first channel, the temperature reduction means being in thermal contact with at least one plate.

2. **(Currently Amended)** A thermal focusing device according to claim 1, wherein the plurality of plates includes:

a first plate having a first surface with a first groove ~~etched~~ formed therein; and

a second plate having a second surface, [and] wherein the first and second surfaces are bonded together [and] so that the first groove forms a first channel of the at least one channel.

3. **(Currently Amended)** A thermal focusing device according to claim 2, wherein:

the second surface has a second groove ~~etched~~ formed therein; and

the first and second grooves face each other forming the first channel ~~when the first and second surfaces are bonded together.~~

4. **(Currently Amended)** A thermal focusing device according to claim 3, wherein:

the first surface has a third groove ~~etched~~ formed therein [and];

the second surface has a fourth groove ~~etched~~ formed therein; and

~~wherein~~ the third groove faces the fourth groove ~~and forms~~ so as to form a second channel when the surfaces are bonded together.

5. **(Currently Amended)** A thermal focusing device ~~according to claim 1,~~
~~wherein the~~ comprising a plurality of plates and a means for temperature reduction in thermal
contact with at least one plate, wherein includes:

a first plate ~~having~~ has a first surface ~~with a first groove etched therein;~~

a second plate ~~having~~ has a second and a third surface, ~~and wherein;~~

the second surface is bonded to the first surface ~~and the~~ so that a first groove
in the second surface forms a first channel, ~~and wherein;~~

the third surface has a second groove ~~etched therein;~~ and[.]

a third plate ~~having~~ has a fourth surface that is bonded to the third surface ~~and~~
~~wherein~~ so that the second groove forms a second channel.

6. **(Original)** A thermal focusing device according to claim 1, wherein one or more of the channels is coated with an inert substance.

7. **(Original)** A thermal focusing device according to claim 1, wherein one of said channels contains a stationary phase substance.

8. (Original) A thermal focusing device according to claim 1, wherein one of said channels is coated with an inert substance and contains one of a liquid stationary phase substance and a solid stationary phase substance.

9. (Currently Amended) A thermal focusing device according to claim 1, ~~wherein the temperature reduction means comprises further comprising:~~ an electro-thermal device ~~in thermal contact with at least one of said plates.~~

10. (Currently Amended) A thermal focusing device according to claim 1, wherein the temperature reduction ~~module~~ means includes an enclosed channel of the at least one channel for conveying one of a cryogen and a coolant through ~~in~~ at least one of said plates.

11. (Currently Amended) ~~The gas-phase~~ A thermal focusing device according to claim [1] 10, wherein:

~~the temperature reduction module includes an~~ enclosed channel is for conveying ~~a coolant in the cryogen through the~~ at least one of [the] said plates; and

the enclosed channel includes a cryogen expansion zone.

12. (Currently Amended) ~~The gas-phase~~ A thermal focusing device according to claim 10 further comprising [a] heating ~~module~~ means for heating and desorbing the trapped sample, the heating means being in thermal contact with at least one plate.

13. (Currently Amended) ~~The gas phase~~ A thermal focusing device according to claim 12, wherein the heating ~~module is~~ means includes at least one of a heating ~~element~~ cartridge and a heat trace integrally formed with the plurality of plates.

14. (Currently Amended) ~~The gas phase~~ A thermal focusing device according to claim 12, wherein:

the at least one plate is formed of an ~~heating module comprises~~ electrically conductive material; and

integral with at least one of the plates, and wherein the heating means includes an electric current source configured to pass an electric current is applied through the at least one plate.

15. (Currently Amended) ~~The gas phase~~ A thermal focusing device according to claim 12, wherein:

the temperature reduction ~~module~~ means and the heating ~~module is~~ means are comprised of a vortex tube;

~~wherein the~~ temperature reduction is accomplished by [the] a cold airstream [of] from the vortex tube; and

[the] heating is accomplished by [the] a hot airstream [of] from the vortex tube.

16. (Currently Amended) A thermal focusing device comprising:
a middle plate with a first surface and a second surface and with material completely removed from between the first and second surfaces of the middle plate to form a continuous pathway with a beginning and an end;

two substantially solid endplates bonded to the middle plate, wherein one endplate is bonded to the first surface and the other endplate is bonded to the second surface and wherein a channel formed within ~~from~~ forms the continuous pathway; and

a temperature reduction means in thermal contact with at least one plate to trap a gas sample in the continuous pathway.

17. **(Currently Amended)** The thermal focusing device according to claim 16 wherein:

the beginning of the pathway is in the center of the middle plate [and];

the end of the pathway is at an outer edge of the middle plate;[,] and

~~wherein~~ one end plate has [a] an aperture ~~in the middle~~ aligned with the beginning of the pathway.

18. **(Currently Amended)** A ~~gas-chromatography~~ thermal focusing device comprising:

a first plate having a first surface;

a second plate having a second surface that is bonded to the first surface, wherein at least one of the first surface and the second surface has a first groove formed therein so that the bonded first and second plates form a corresponding first channel;

a third plate having a third surface that is bonded to a fourth surface of the second plate, wherein at least one of the third surface and the fourth surface has a second groove formed therein so that the second and third plates bonded at the third and fourth surfaces form a corresponding second channel;

~~a temperature modulator, wherein said temperature modulator is capable of~~
means for cooling at least one of the said bonding plates to trap a gas sample in the first
channel[.]; and[,]

a heating means in thermal contact with at least one plate.

19. **(Currently Amended)** A ~~gas chromatography~~ thermal focusing device according to claim [1] 18, wherein the second plate has at least one aperture therethrough arranged to permit communication between the first and second channels forming one continuous channel.

20. **(Currently Amended)** A ~~gas chromatography~~ thermal focusing device according to claim 19 wherein the channel is coated with an inert substance.

21. **(New)** A thermal focusing device according to claim 2, further comprising a third plate, wherein:

the second plate has a third surface with a second groove formed therein;

the third plate has a fourth surface; and

the third and fourth surfaces are bonded together so that so that the second groove forms a second channel of the at least one channel.

22. **(New)** A thermal focusing device according to claim 3, further comprising a third plate, wherein:

the second plate has a third surface with a third groove formed therein;

the third plate has a fourth surface; and

the third and fourth surfaces are bonded together so that so that the second groove forms a second channel of the at least one channel.

23. (New) A thermal focusing device according to claim 2, further comprising a third plate, wherein:

the second plate has a third surface;

the third plate has a fourth surface with a second groove formed therein; and

the third and fourth surfaces are bonded together so that so that the third groove forms a second channel of the at least one channel.

24. (New) A thermal focusing device according to claim 3, further comprising a third plate, wherein:

the second plate has a third surface;

the third plate has a fourth surface with a third groove formed therein; and

the third and fourth surfaces are bonded together so that so that the third groove forms a second channel of the at least one channel.

25. (New) A method comprising:

passing a first fluid through a first channel in a device, the first fluid being one of a cryogen and a coolant; and

trapping a gas sample within a second channel in the device.

26. (New) A method according to claim 25, wherein:
the first fluid is the cryogen; and
the passing of the first fluid through the first channel includes expanding the cryogen within the first channel.
27. (New) A method according to claim 25, further comprising desorbing the gas sample from the second channel.
28. (New) A method according to claim 27, wherein the desorbing of the gas sample includes heating the device.
29. (New) A method according to claim 28, wherein the heating of the device includes passing an electric current through the device.
30. (New) A method according to claim 28, wherein:
the heating of the device includes passing a second fluid through a third channel in the device;
the second fluid is hotter than the first fluid;
the passing of the first fluid ceases at or before the passing of the second fluid begins.